



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,143	03/01/2004	Dinesh G. Dutt	ANDIP031A	3152
22434	7590	03/28/2007	EXAMINER	
BEYER WEAVER LLP			SCHEIBEL, ROBERT C	
P.O. BOX 70250			ART UNIT	
OAKLAND, CA 94612-0250			PAPER NUMBER	
			2616	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	03/28/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

sk

Office Action Summary	Application No. 10/791,143	Applicant(s) DUTT ET AL.	
	Examiner Robert C. Scheibel	Art Unit 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/04, 6/04 & 11/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 1, 8, 9, 11, 12, 14, 15, 23, 24, 26, 28, and 29 is objected to because of the following informalities:

- The phrase Domain_ID is not used consistently (see claims 1, 9, 14, 15, 24, and 29). In places it is “Domain ID” and in others it is “Domain_ID”. Please select one of these and change the other instances accordingly. The latter style is used throughout the specification.
- In claims 8 and 23, the acronym “SW_RSCNs” is used in line 8 of this claim and has not been defined earlier in the claims. Please update this to “Switch Register State Change Notifications (SW_RSCNs)”.
- In claim 9, please change “fabric” on line 6 to “fabric;”.
- In claims 9 and 24, line 9, please change “proxies” to “proxy” for consistency.
- In claims 9 and 24, line 11, the phrase “the VSAN” doesn’t have antecedent basis in the claims. Examiner assumes Applicant intends the language “a VSAN” and requests the claim to be amended as such.
- In claims 11 and 26, line 1, (and claims 12 and 27, line 3) the phrase “the name server database” doesn’t have proper antecedent basis in the claims. Examiner assumes Applicant intends the language “a name server database” and requests the claim to be amended as such.

- In claims 11 and 26, line 5, the phrase “the name server” doesn’t have proper antecedent basis in the claims. Examiner assumes Applicant intends the language “a name server” and requests the claim to be amended as such.
- In claim 11, line 1, the phrase “the list” doesn’t have antecedent basis in the claims. Examiner assumes Applicant intends the language “a list” and requests the claim to be amended as such.
- Claims 12 and 27 recite the limitation “SW_RCSNs”. This should be updated to “SW_RSCNs” to match the acronym definition (State Change as opposed to Change State). In addition, the acronym “RCSN” and “SW_RCSN” appears in several other claims and should be similarly changed (to “RSCN” and “SW_RSCN”).
- In claims 13 and 28, the phrase “the replication” in line 2 should be change to “replication”.
- In claim 23, line 3, “the content” should be changed to “content”.
- In claim 23, lines 5, 6, and 8, “the set” should be changed to “a set”.
- In claim 23, line 5, the acronym FSPF should be defined as this is it’s first use in the claim tree.
- In claim 26, “vice-versa;” should be changed to “vice-versa.”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2616

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims **9, 11, 14, 23, 24, and 26** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
4. Claim **9** recites the limitation "the exported Domain_IDs" in line 8. There is insufficient antecedent basis for this limitation in the claim.
5. Claims **9, 11, 24, and 26** recite the limitation "each Switch in the second fabric" in lines 9-10, 9-10, 5-6, and 5-6, respectively. There is insufficient antecedent basis for this limitation in the claim. Previously in the claim, only one Switch is recited and this limitation implies multiple Switches.
6. Claim **9 and 24** recites the limitations "the first VSAN" and "the second VSAN" (two instances) in lines 11-12. There is insufficient antecedent basis for this limitation in the claim. These limitations should be updated to either "a first VSAN" and "a second VSAN" or "the first fabric" and "the second fabric".
7. Claims **14 and 29** recite the limitation "the domain number space" in line 4. There is insufficient antecedent basis for this limitation in the claim.
8. Claim **19** recites the limitation "the Switch" in line 1. There is insufficient antecedent basis for this limitation in the claim. This could be overcome by changing the limitation to read "the communication mechanism".
9. Claim **23** recites the limitation "the adjacent fabrics" in lines 3 and 6. There is insufficient antecedent basis for this limitation in the claim. This could be overcome by

Art Unit: 2616

changing the limitation to "the fabrics" or indicating earlier in the claim tree that some or all of the fabrics are adjacent.

Double Patenting

10. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

11. Claims 1-29 are provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-29 of copending Application No. 10/609,442. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

12. Applicant is advised that should claims 11-13 be found allowable, claims 26-28 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

This objection could be overcome by canceling claims 26-28, or changing the dependency of claim 26 (to claim 22) so that these claims are no longer identical.

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

14. Claims **1-11, 14-26 and 29** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent 6,985,490 to Czeiger et al.

Regarding claim 1, Czeiger discloses an apparatus, comprising: a Switch (the combination of elements 26 and 96 in figure 2) configured to couple a first fabric (FC SAN A 22 of figure 2) having a first set of end devices (clients 24) and a second fabric (FC SAN B 42 of figure 2) having a second set of end devices (clients 44), each of the first set of end devices and the second set of end devices having a unique Domain_ID address (the first byte of the address (see lines 23-28 of column 1) – corresponding to the virtual switch – this is also known as the Domain_ID in the art (such as the Fibre Channel standards)) respectively, the Switch configured to enable communication between the first set of end devices in the first fabric with the second set of end devices associated with the second fabric (discussed throughout; see abstract as well as lines 55-58 of column 2, for example) while maintaining the unique Domain ID addresses of the first set of end devices and the second set of end devices (also discussed throughout; see lines 63-64 of column 1 and lines 31-33 of column 2, for example).

Similarly, regarding claim **15**, Czeiger discloses an apparatus, comprising: a first fabric (FC SAN A 22 of figure 2); a second fabric (FC SAN B 42 of figure 2); a first set of end devices associated with the first fabric (clients 24) and a second set of end devices associated with the second fabric (clients 44), the first set and the second set of end devices each having a unique Domain ID address respectively (the first byte of the address (see lines 23-28 of column 1) – corresponding to the virtual switch – this is also known as the Domain_ID in the art (such as the Fibre Channel standards)); and a communication mechanism configured to enable the first set of end devices associated with the first fabric to communicate with the second set of end devices associated with the second fabric (discussed throughout; see abstract as well as lines 55-58 of column 2, for example) while maintaining the unique Domain ID addresses of the first set of end devices and the second set of end devices (also discussed throughout; see lines 63-64 of column 1 and lines 31-33 of column 2, for example).

Regarding claims **2 and 17**, Czeiger discloses the limitation that the first and second fabrics are first and second Virtual Storage Area Networks respectively in that the switches within each of SAN A and SAN B are combined into virtual switches (see figure 2 and lines 13-33 of column 2, for example).

Regarding claims **3 and 18**, Czeiger discloses the limitation that the first fabric and the second fabric are separate physical fabrics in FC SANS A and B of figure 2 as well as lines 56-59 of column 1.

Regarding claims **4 and 19**, Czeiger discloses the limitations that the Switch is a Border Switch that is part of both the first fabric and the second fabric (see figure 2 which shows the switch (the combination of elements 26 and 96) as part of both fabrics), the Border Switch

Art Unit: 2616

configured to inject frames of information between the first fabric and the second fabric to enable communication between members of the first set of end devices and the second set of end devices (discussed throughout; see abstract as well as lines 52-55 of column 7 and figure 5, for example).

Regarding claims **5 and 20**, Czeiger discloses the limitation that the first fabric and the second fabric are Edge fabrics and further comprising a Transit fabric configured to carry traffic between the first fabric and the second fabric in Figure 2. The Switch (the combination of elements 26 and 96) is clearly located at the edge of the SANs. Element 54 is a transit fabric which carries traffic between the two other fabrics (see lines 61-63 of column 3 as well).

Regarding claims **6 and 21**, Czeiger discloses the limitation that the first fabric and the second fabric are adjacent to each other and the Switch is configured to directly switch traffic between end devices in the first and second fabrics in Figure 2 as well as Figure 5 which show how frames (traffic) are switched between end devices on each SAN.

Regarding claims **7 and 22**, Czeiger discloses the limitation that the Border Switch is configured within an Inter-VSAN zone, the Inter-VSAN zone including members from the first set of end devices associated with the first fabric and the second set of end devices associated with the second fabric. See figure 2, lines 15-22 of column 3, figure 4, and lines 10-41 of column 7. These figures and passages explain how to configure the Switch (by updating the translation tables) so that the end devices in FC SANs A and B so that they can communicate with each other; this set of end devices in the translation tables is interpreted as a zone and it clearly contains members from both fabrics.

Regarding claims **8 and 23**, Czeiger discloses the limitations that the Border Switch determines via the Inter-VSAN zone: (i) the content of a name server database that is exported from one of the adjacent fabrics to the other and vice versa (see lines 34-48 of column 2 and lines 28-32 of column 7; the passage in column 7 indicates that the virtual switch identification is part of the name server database content and the passage in column 2 indicates the decision of which of this content to export); (ii) the set of FSPF domains to export in Link State Update (LSU) messages (see lines 34-48 of column 2 which indicates that the LSR is exported to the compound network); (iii) the set of addresses to switch from one of the adjacent fabrics to the other and vice versa (the translation tables discussed throughout); and (iv) the set of adjacent fabrics to which SW_RSCNs received from a fabric are propagated and vice-versa (see lines 34-48 of column 2; the gateway determines which virtual switches and LSR information to be exported and clearly identifies where (which fabrics) to forward this information).

Regarding claims **9 and 24**, Czeiger discloses the limitation that the Border Switch is configured to (v) rewrite the VSAN of a frame received from the first VSAN to the second VSAN if traffic is destined to the second VSAN in the second and third steps of figure 5.

Regarding claims **10 and 25**, Czeiger discloses the limitation that the Border Switch in the Inter-VSAN zone supports the definition and exchange of Inter-VSAN zones in figure 2, lines 15-22 of column 3, figure 4, and lines 10-41 of column 7. The updating of the translation tables defines the Inter-VSAN zones. The process by which the relevant information in these tables is passed to other fabrics (see lines 34-48 of column 2 for example) discloses the exchange of the Inter-VSAN zone.

Art Unit: 2616

Regarding claims **11 and 26**, Czeiger discloses the limitation that the name server database in the Border Switch is configured to: (i) build the list of name server entries to be exported from a first fabric to the second fabric and vice-versa (see lines 34-48 of column 2 and lines 28-32 of column 7; the passage in column 7 indicates that the virtual switch identification is part of the name server database content and the passage in column 2 indicates the decision of which of this content to export).

Regarding claims **14 and 29**, Czeiger discloses the limitation that the Switch enables communication between the end devices in the first fabric and the second fabric while maintaining the unique Domain_IDs of each of the first set and the second set of end devices by: (i) administratively partitioning the domain number space across the fabrics (the partitioning of the switch ids to each of the switches; see lines 23-30 of column 1 which indicates that the switch identifiers are administered to identify each switch); or (ii) associating a range of Domain-IDs to be used only for Inter-VSAN routing.

Regarding claim **16**, Czeiger discloses the limitation that the communication mechanism is a Switch configured to couple the first fabric and the second fabric, the Switch configured to enable communication between the first set of end devices in the first fabric with the second set of end devices associated with the second fabric while maintaining the unique Domain ID addresses of the first set of end devices and the second set of end devices (the translation table (updated in Figure 4) enables communication between the first and second sets of end devices; as indicated above, the addresses of the end devices are not changed (see lines 63-64 of column 1 and lines 31-33 of column 2, for example)).

Claim Rejections - 35 USC § 103

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

16. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

17. Claims **12-13 and 27-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 6,985,490 to Czeiger et al in view of U.S. Patent Application Publication 2004/0230787 to Blumenau et al.

Czeiger discloses all limitations of parent claims 11 and 26 as indicated in the rejection under 35 U.S.C. 102(e) above. Czeiger does not disclose expressly the limitations of claims 12 and 27 of Switch Register State Change Notifications being generated across the fabrics when the name server database changes. Blumenau discloses sending an RSCN whenever the system configuration changes in paragraph 45 on page 6. Czeiger and Blumenau are analogous art because they are from the same field of endeavor of Fibre Channel systems. At the time of the invention it would have been obvious to a person of ordinary skill in the art to update other

Art Unit: 2616

switches in the system of configuration changes using RSCN messages as in Blumenau. The motivation for doing so would have been to dynamically keep the system updated of configuration changes. Therefore, it would have been obvious to combine Blumenau with Czeiger for the benefit of dynamic configuration updates to obtain the invention as specified in claims 12 and 27.

Regarding claims **13 and 28**, Czeiger, modified, discloses the limitation that the Border Switch is further configured to prevent the replication of RCSNs in one of the following ways: (i) selecting a first Switch and a second Switch in the first or second fabric for distributing RCSNs in each fabric respectively; (ii) statically configuring the fabrics; or (iii) selecting a specified Switch to distribute the RCSNs (the switch which is the combination of elements 26 and 96 of figure 2 is selected to provide the configuration updates via it's gateway as indicated in lines 34-48 of column 2).

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent Application Publication 2002/0188754 to Foster et al discloses a method for domain addressing in a communications network.
- U.S. Patent Application Publication 2003/0149848 to Ibrahim et al discloses a wire speed transfer in a storage virtualization controller.

Art Unit: 2616

- U.S. Patent 6,529,963 to Fredin et al discloses methods for interconnecting independent fibre channel fabrics.
- U.S. Patent Application Publication 2004/0151174 to Del Signore et al discloses a method for routing between fibre channel fabrics.
- U.S. Patent 6,848,007 to Reynolds et al discloses a system for mapping addresses of SCSI devices between SANs.
- U.S. Patent 2006/0034302 to Peterson discloses inter-fabric routing.
- U.S. Patent Application Publication 2006/0159081 to Dropps discloses address translation in fibre channel switches.
- U.S. Patent Application Publication 2002/0156924 to Czeiger et al discloses a method for communicating between fibre channel systems.
- U.S. Patent 7,155,494 to Czeiber et al discloses a method for mapping between virtual local area networks and fibre channel zones.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert C. Scheibel whose telephone number is 571-272-3169. The examiner can normally be reached on Monday and Thursday from 7:00-5:30 Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema S. Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2616

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RCS 3-26-07

Robert C. Scheibel
Patent Examiner
Art Unit 2616

Seema S. Rao

SEEMA S. RAO 3/27/07

SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600